



Environmental Public Health Tracking: Building a Sustainable Standards-based National Network

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How do environmental hazards relate to health effects in America?



Answer = We don't know

- Lack of data
- Lack of tools
- Lack of capacity
- Lack of standards

Lack of ability to track and quantify disease burden and prevalence of hazard and exposure



Environmental Public Health Tracking: Background



- Pew Environmental Health Commission
 - ◆ 2001 report issues a call for action to fill America's environmental public health gap
- CDC convened tracking network workgroups 2001-2002
- Environmental Public Health Tracking Program initiated in 2002



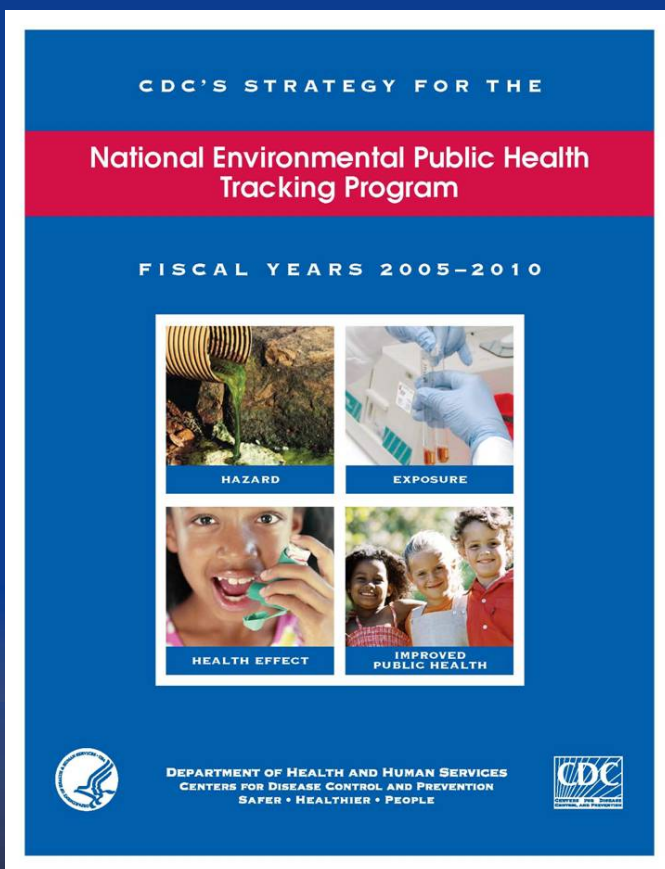
Tracking = Surveillance



- Environmental public health tracking is the ongoing, systematic collection, integration, analysis, interpretation of data about the following factors:
 - environmental hazards;
 - human exposure to environmental hazards;
 - health effects potentially related to exposure to environmental hazards.
- Data must be disseminated to plan, implement, and evaluate environmental public health action.



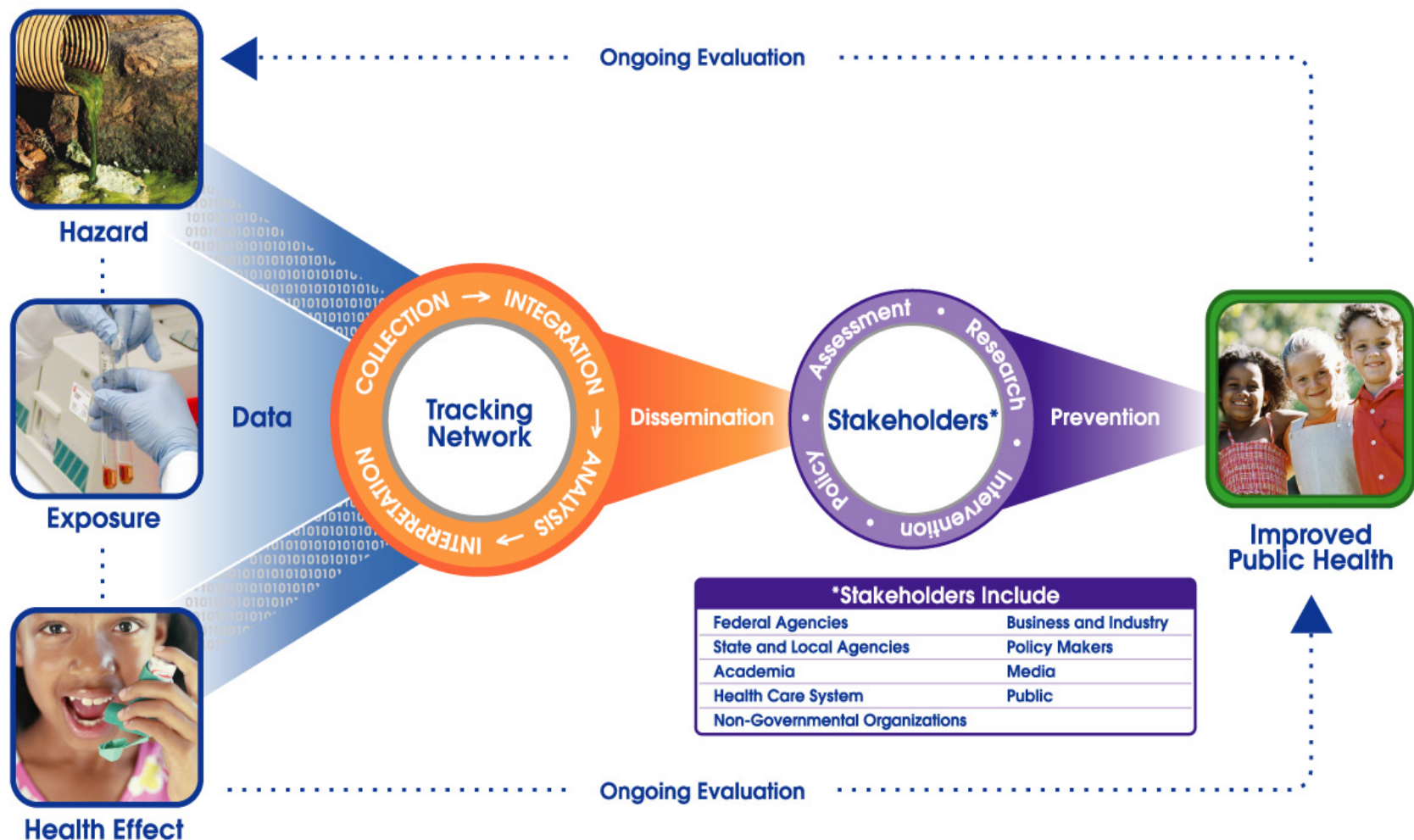
Our Mission



To provide information from a nationwide network of integrated health and environmental data that drives actions to improve the health of communities

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ENVIRONMENTAL PUBLIC HEALTH TRACKING



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CENTERS FOR DISEASE CONTROL AND PREVENTION
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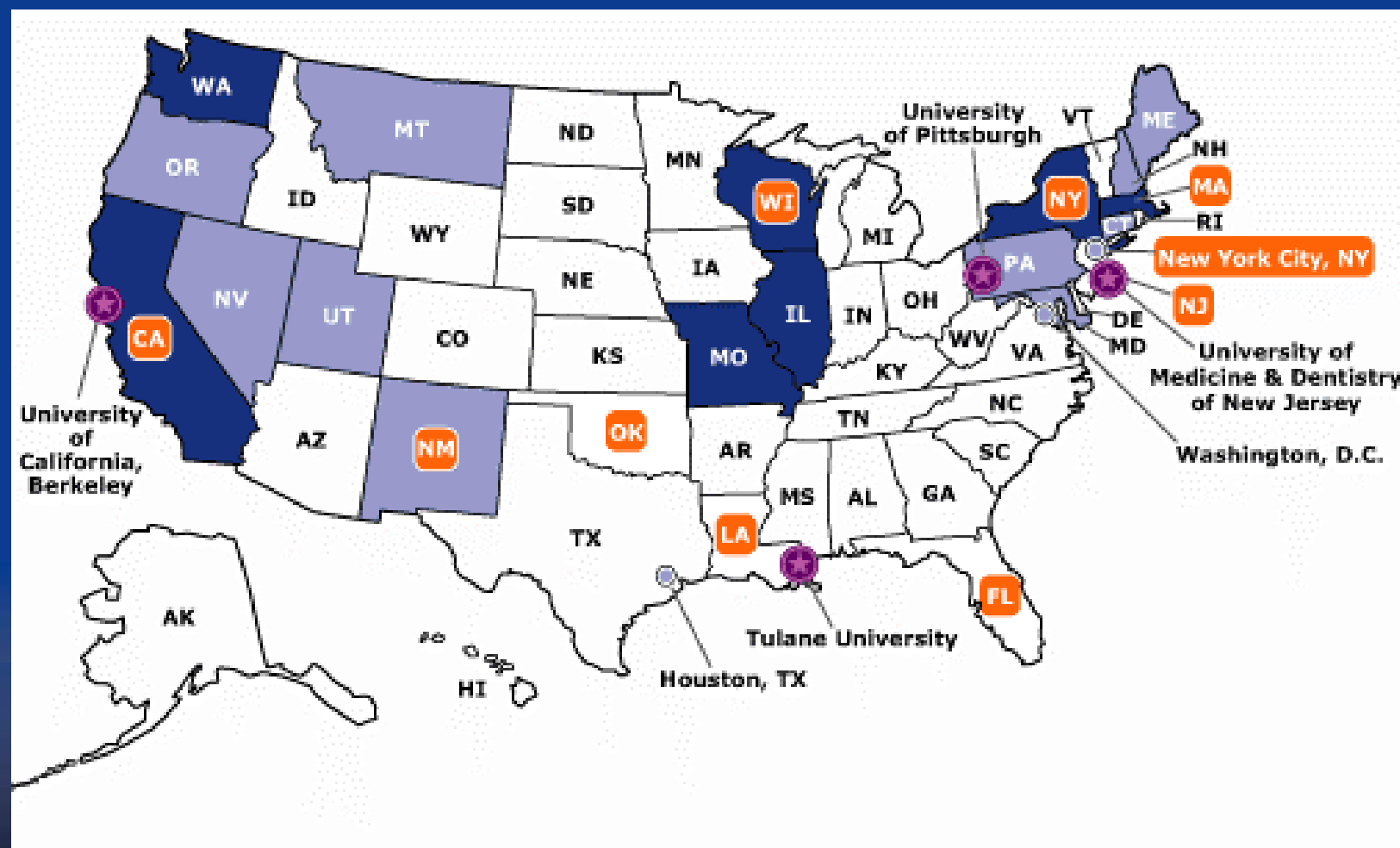


STRATEGIC PARTNERSHIPS FOR DEVELOPING & IMPLEMENTING ENVIRONMENTAL PUBLIC HEALTH TRACKING





Funded State/Local Programs



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Program Priorities



- Chronic diseases and other health effects with possible environmental etiology
- Chemicals, physical agents, biomechanical stressors, biological toxins
- Focus determined by HP 2010, Pew Report, State priorities
- Capacity to exchange data with EPA's National Environmental Information Exchange Network
- Part of CDC's Public Health Information Network (PHIN)



Part of CDC's Public Health Information Network



Early Event Detection
Outbreak Management
Disease Reporting & Monitoring
Secure Communications
Analysis & Interpretation
Information Dissemination & KM
PH Response



Federal Health Architecture
NHII
Consolidated Health Informatics

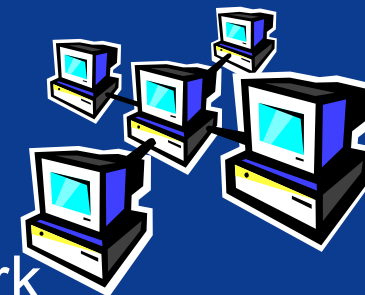
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Features of the National Environmental Public Health Tracking Network



- Web-based
- Standards-based (PHIN)
- Compatible with EPA Exchange Network
- Exists at the local, state, & national level
- Provides direct access to distributed data sources (and exchange of information as appropriate)
- Comprised of a core set of health effects, exposures and hazards that all states/locals will track





Features of the National Environmental Public Health Tracking Network (cont'd)



- Flexible design so states/locals can also track their own unique priorities
- Includes a robust metadata registry
- Serves multiple customers but levels of access are based on the roles and purpose of the customer
- Includes tools for linkage, visualization, analysis, generation of alerts, and reporting
- HIPAA compliant





Challenges Encountered



- Data availability/access/quality
 - ◆ Not in electronic form / incompatible format / lack of standards
 - ◆ Lack of knowledge on where data exist and how to access
 - ◆ Spatial / temporal issues
 - ◆ Confidentiality and privacy concerns (e.g. HIPAA; FERPA; state laws)
- Methods and Tools
 - ◆ No common toolbox of methods for linking data
 - ◆ Issues with exposure estimation
- Capacity
- Communication and outreach
 - ◆ Understanding stakeholder priorities
 - ◆ Language barriers

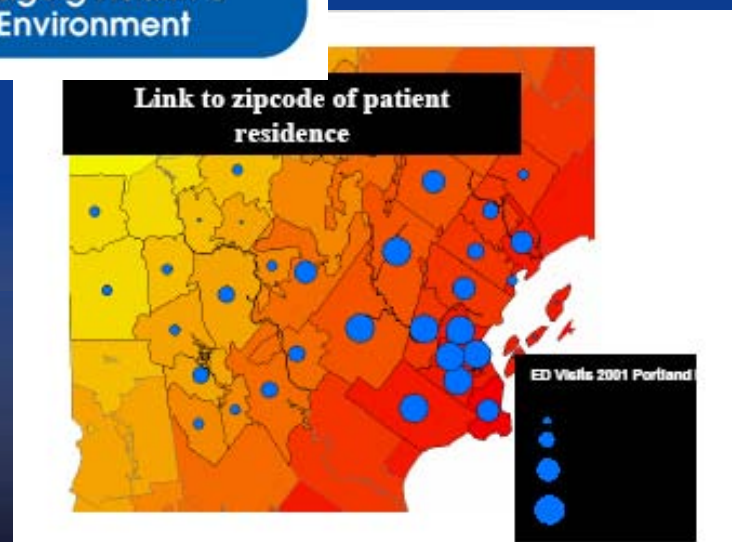


EPHT Collaborations



Special Projects

- NYS Data Exchange Project
- PHASE Project
- HELIX-Atlanta Project





New York State Pilot Data Exchange Project - Background



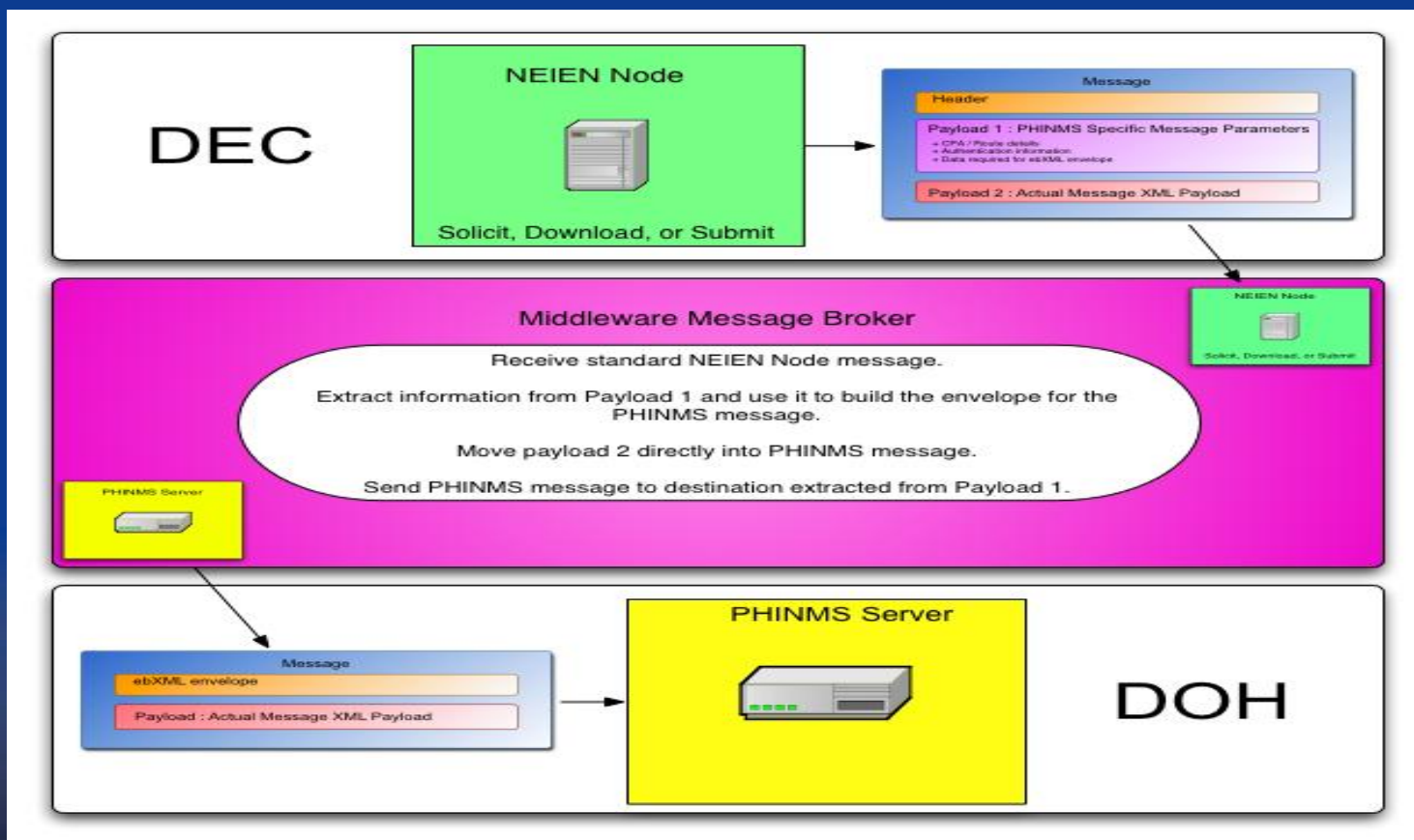
- New York State DOH and New York State DEC received funding under the EPHT initiative to develop a Pilot Data Exchange between the two agencies that will integrate both the Public Health Information Network Messaging System (PHINMS) architecture operated by DOH and the Exchange Network architecture operated by DEC.



What is PHINMS?

- Software developed by CDC to securely transmit public health information over the Internet.
- Based upon open industry standards and includes a client entity module (the sending site) and a server entity module (the receiving site).

Overview of the Integration Broker Used by New York





New York State Project Future Activities



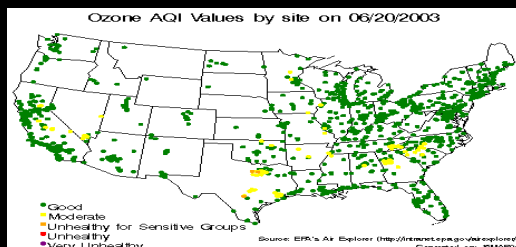
- Expand the system for additional data flows with NYSDEC
- Implement bi-directional data flows
- Collaborate with New York City Dept of Health



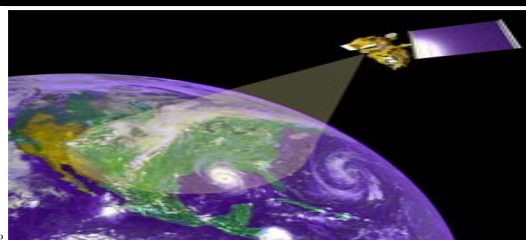
The PHASE Project



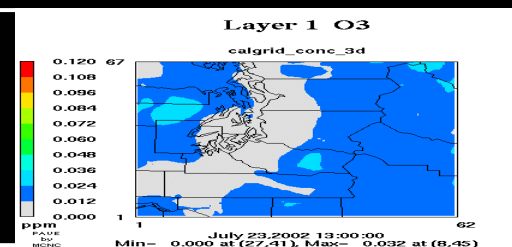
The Public Health Air Surveillance Evaluation (PHASE) project is a collaboration between CDC, EPA, and three state public health departments (NY, ME and WI).



Ambient Air Monitoring



NASA Satellite Data



Air Quality Models



The PHASE Project



Objective and Scope

- ◆ Develop and evaluate alternative air quality characterization methods for EPHT

Activities

- ◆ Air Quality Characterization
- ◆ Air Quality Public Health Analyses
- ◆ Produce information that can be ROUTINELY used to track potential relationships between public health and air quality



PHASE Process



- EPA provides State partners with alternative measures to characterize air quality
- State partners “link” the alternative measures to available health surveillance data
- Analyze results
- Evaluate & compare the public health utility of various air quality characterization methods.



Initial PHASE Project Conceptual Framework



Phase 1 - Development and Evaluation

Can we produce better air quality maps
by combining data sets (Ambient
Monitoring, Modeling, Satellite Data)?

If so, do these maps improve currently
available EPHT capabilities (proximity,
interpolation)?

Phase 1
Successful?

YES

Phase 2 - Operability

How do State partners acquire the
improved air quality information?

- Generate the maps themselves
- Maps supplied to them

We are here

NO

State partners to use
currently available
approaches



Health and Environment Linked for Information Exchange, Atlanta (HELIX-Atlanta)



- Will create methods for putting environment and health data together
- Will help inform the National EPHT Network development through the sharing of methodology and lessons learned
- Includes over 70 partners
- 5 teams looking into such concerns as:
 - ◆ Birth Defects
 - ◆ Cancer
 - ◆ Developmental Disabilities
 - ◆ Respiratory Health
 - ◆ Water issues





HELIX-Atlanta Purpose & Long-term Goals



- Build a Sustainable Metropolitan Atlanta Area EPHT Network Consistent with the National EPHT Network
- Build Bridges Between Health and Environment in the 5-County Metropolitan Atlanta Area
- Disseminate Credible Information
- Advance Environmental Public Health Science & Research



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ENVIRONMENTAL HAZARDS & HEALTH EFFECTS

National Environmental Public Health Tracking Program

IN THE SPOTLIGHT



CDC's Strategy for the National Environmental Public Health Tracking Program [PDF, 2.2 Mb]

Defines the vision, mission, and five goals that set the direction of the EPHT Program



EPHT Partnerships

Find out what organizations and agencies are working with CDC to achieve EPHT Program goals ...[more](#)



HELIX: Atlanta

Learn about development and testing of EPHT-applicable methods in 5 metropolitan Atlanta counties ...[more](#)

About the Program

Background, Vision, At a Glance, Program in Brief, Conceptual Diagram ...[more](#)

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Key Resources

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For more information: www.cdc.gov/nceh/tracking

Contact us: EPHT@cdc.gov

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